Course: PHYS112 Electricity and Magnetism (with lab)
Term: Spring 2018
Room: HRZ212
Class: MWF. 9:00-9:50am

Instructor Contact Information

Instructor: Han Pu
Office: BRK 309
Email: hpu@rice.edu
Office Hours: Tu. 1:30~2:30pm; Fri. 2:00~3:30pm; or by email appointment
Tutorial sessions (TA: TBA):
Sewall Hall 301, Mon. 2:00~3:30pm

Lab Instructor: Stan Dodds
Office: HRZ 215
Email: dodds@rice.edu

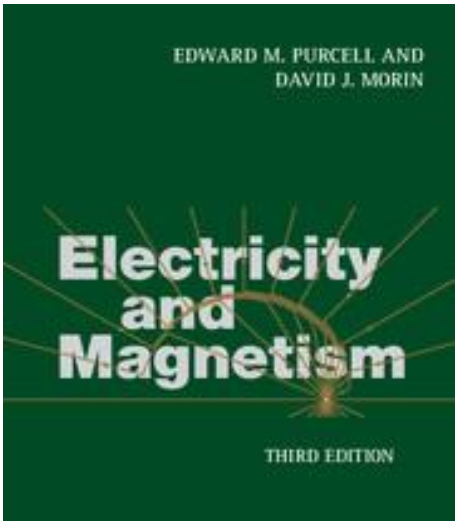
Course Objectives and Learning Outcomes

In Phys112, we will study the theory of electromagnetism. The electromagnetic force is the force which binds electrons to protons to form atoms, and atoms to atoms to form molecules and solids. This is the fundamental force for chemistry and biology, and one of the most important forces in our lives. As we will see, there are a great variety of electromagnetic phenomena, but the underlying theory can be cast into just four equations. In this course we will take on a journey to learn these four equations. Phys112 will parallel Phys102, but will be more theoretical and mathematical, and the work load will probably be somewhat higher. The Phys112 lab will also be run separately. It will include 7 experiments. Dr. Stan Dodds is in charge of the lab.

Topic Learning Outcomes: By the end of the course, students will be able to
(1) understand the basic laws of electromagnetism
(2) are familiar with vector calculus
(3) understand the connection between electricity and magnetism
(4) understand Maxwell's equation in both differential and integral forms.

Required Texts and Materials

Electricity and Magnetism (3rd edition), Purcell and Morin, Cambridge University Press, 2013.



EXAMS AND PAPERS

Two midterm exams (7~9pm, Wed. Feb. 14th and Th. March 22th), and one final exam.

GRADE POLICIES

I plan to assign a homework set each week, usually due at the beginning of class one week later. Homework sets will be distributed in class but they will also be available from the course web page.

Homework Policy: Homework must be done under the Honor System. You are encouraged to discuss the homework problems with your PHYS 112 classmates and with the instructor, but you must write up your solutions *independently*. Of course, you must not copy from anyone else's solutions. The homework papers you hand in should be the result of your own thought and effort. Homework can be turned in during class or to the box labeled 'Physics111/112 Homework' located on the 2nd floor of Brockman Hall.

Late Policy: Late homework will be counted off 20% for each day late, unless excused by illness or some other valid reason. Late homework must be delivered to the instructor for that problem set and the student must write "Late" and the date and time on the front page.

Grading Weights:		
	Lab:	15%
	Homework:	30%
	Midterm Exam 1:	15%
	Midterm Exam 2:	15%
	Final Exam:	25%

RICE HONOR CODE

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

DISABILITY SUPPORT SERVICES

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

SYLLABUS CHANGE POLICY

This syllabus is only a guide for the course and is subject to change with advanced notice.